

Claims

1. A dielectric resonant device comprising:

a ceramic cavity having an open face and coated with a conductive film, the cavity containing a dielectric core;

a conductive panel for covering the open face; and

a resilient grounding plate sandwiched between the open face of the cavity coated with the conductive film and the conductive panel,

wherein the conductive panel is fixed to the cavity in such a manner as to be pressed thereto.

2. A dielectric resonant device according to Claim 1, wherein the grounding plate is provided with projections which project in such a manner as to increase the thickness of the grounding plate in a direction of a gap between the conductive film provided on the open face and the conductive panel.

3. A dielectric resonant device according to one of Claims 1 and 2, wherein the open face comprises opposing first and second open faces of the cavity which are parallel to each other, and the conductive panel comprises first and second panels for covering the first and second open faces, respectively, the first and second panels being fixed by screws.

4. A dielectric resonant device according to Claim 3,

wherein the screws are provided in a plurality of positions, at least some of the screws being disposed in the positions at which the screws pass through the inside of the cavity.

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5. A dielectric resonant device according to Claim 3 or 4, wherein a film of silver is disposed on the surface of the screws

6. A dielectric resonant device according to one of Claims 3 and 4, wherein the dielectric core in the cavity is formed integrally therewith with two dielectric columns disposed perpendicular to each other so as to form a cross; the cross-section of sidewalls of the cavity, parallel to the open face of the cavity, is substantially uniform; the two dielectric columns are each provided with concavities formed in the sidewalls of the cavity and extending along the axis of the dielectric column; some of the screws are disposed inside the concavities and outside the cavity; and the other screws which are not inside the concavities are disposed inside the cavity.

7. A filter comprising:

a dielectric resonant device according to one of Claims 1 to 5,

wherein the conductive panel is provided with input-output loops.

8. A duplexer comprising:

filters according to Claim 6,

wherein either the input-output loops coupling with resonant modes in two resonant regions among a plurality of resonant regions of the cavities containing the dielectric cores or electrodes coupling with the input-output loops are led to the outside as input-output units for a common antenna.

9. A communication apparatus comprising:

a filter according to Claim 6 or a duplexer according to Claim 7.

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